

On page 78, line 32, following "control and data over Ethernet", please delete "32" and insert therefor -- 41 --.

In the Drawings

Please amend Figures 13b, 16c, 17, 18, 19, 20, 23, 26, 35, and 55 as shown in red in the attached drawings.

REMARKS

Applicants respectfully request that the Examiner enter the amendments set forth above prior to examining the above-referenced application.

Applicant amend the specification and Figures 13b, 16c, 17, 18, 19, 20, 23, 26, 35, and 55 to correct typographical errors. Specifically, reference numeral 32 is a duplicate. Therefore Applicants replace reference numeral 32 with reference numeral 41 in both the specification and Figures 13b, 16c, 17, 18, 19, 20, 23, and 26. Applicants add reference numeral 41 to the connection between NMS 60 and the network device 540 in Figure 35. Reference numeral 838 is added to the input marked "Alt. Input from other EX CTS" in Figure 55. Both reference numeral 41 and reference numeral 838 are referred to in the specification and used in other figures to designate the same part of the invention. No new matter is added by these amendments.

In addition, Applicants amend Figure 55 to remove an extraneous line section to indicate the correct connection of the *output* 770 to the Alt. *output* to other EX CTS. Support for this amendment can be found throughout the specification, for example, on page 198, lines 20-23. In particular, the specification recites that "the output 770 (marked "Alt. Output to other EX CTS") of timing module 76 may be provided to the other EX CTS and received as

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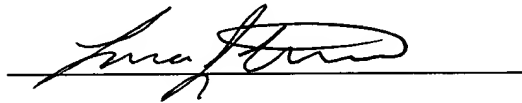
input 838 (marked "Alt. Input from other EX CTS"). Thus, no new matter is added by this amendment.

For the Examiner's convenience, Applicants enclose a copy of page 78 of the specification in which the above corrections are indicated in red.

The Examiner is urged to telephone the undersigned Attorney for Applicant in the event that such communication is deemed to expedite prosecution of this matter.

Respectfully submitted,

Date: January 3, 2001



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number in the PMD file and acting accordingly. Consequently, the MCD software does not need to be modified, rebuilt, tested and distributed with new hardware. The changes required in the software system infrastructure to support new hardware are simpler modify logical model 280 (Fig. 3a) to include: a new entry in the PMD file (or a new PMD file) and, where necessary, new device drivers and applications. Because the MCD software, which resides in the kernel, will not need to be modified, the new applications and device drivers and the new DDL files (reflecting the new PMD file) for the configuration database and NMS database are downloaded and upgraded (as described below) without re-booting the computer system.

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Network Management System (NMS):

Referring to Fig. 13b, as described above, a user / network administrator of computer system 10 works with network management system (NMS) software 60 to configure computer system 10. In the embodiment described below, NMS 60 runs on a personal computer or workstation 62 and communicates with central processor 12 over Ethernet network ~~32~~⁴¹ (out-of-band). Instead, the NMS may communicate with central processor 12 over data path 34 (Fig. 1, in-band). Alternatively (or in addition as a back-up communication port), a user may communicate with computer system 10 through a console interface / terminal (840, Fig. 2a) connected to a serial line 66 connecting to the data or control path using a command line interface (CLI) protocol. Instead, NMS 60 could run directly on computer system 10 provided computer system 10 has an input mechanism for the user.

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During installation, an NMS database 61 is established on, for example, work-station 62 using a DDL executable file corresponding to the NMS database. The DDL file may be downloaded from persistent storage 21 in computer system 10 or supplied separately with other NMS programs as part of an NMS installation kit. The NMS database mirrors the configuration database through an active query feature (described below). In one embodiment, the NMS database is an Oracle database from Oracle Corporation in Boston, Massachusetts.

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The NMS and central processor 12 pass control and data over Ethernet ~~32~~⁴¹ using, for example, the Java Database Connectivity (JDBC) protocol. Use of the JDBC protocol

FIG. 13b

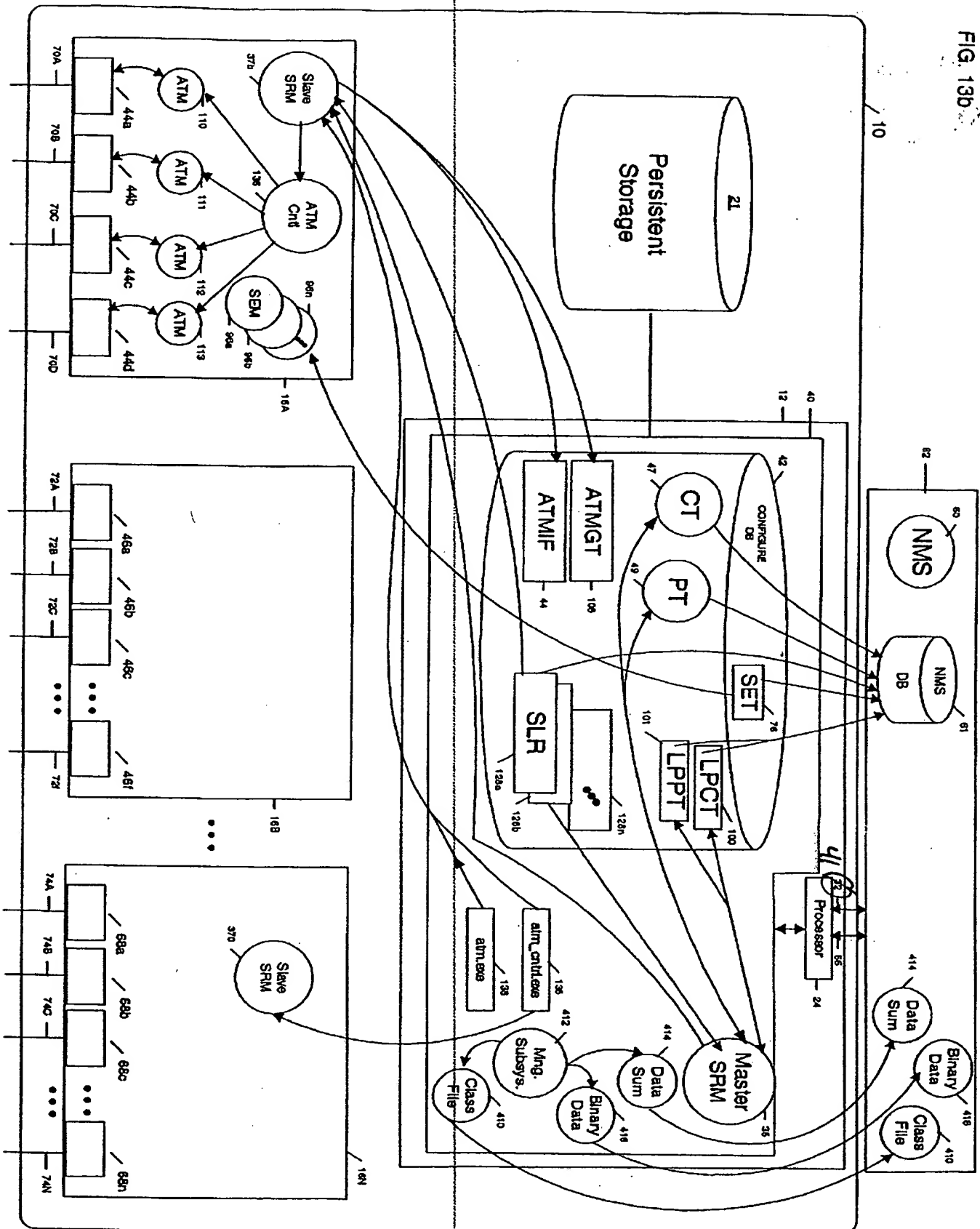
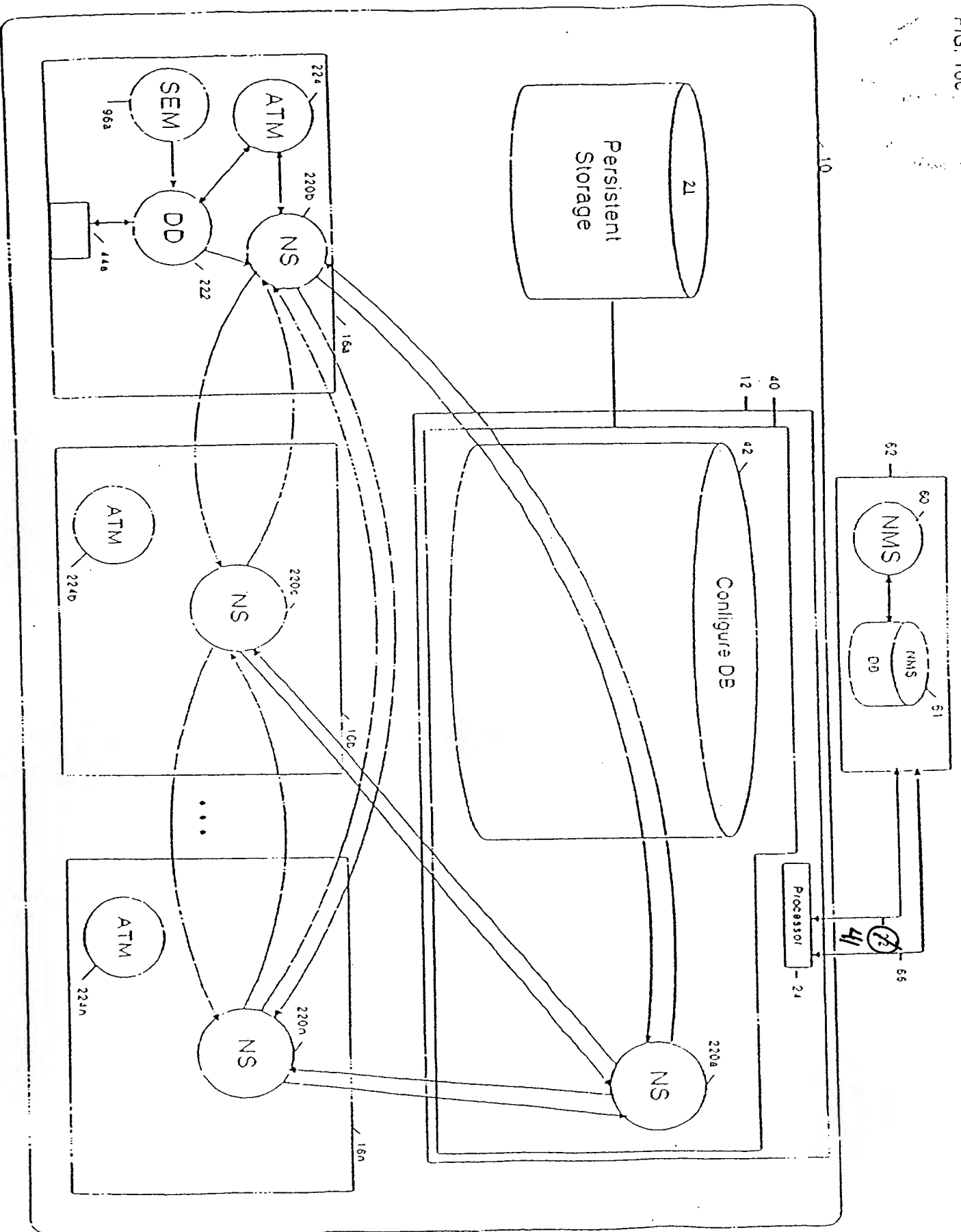


FIG. 16c



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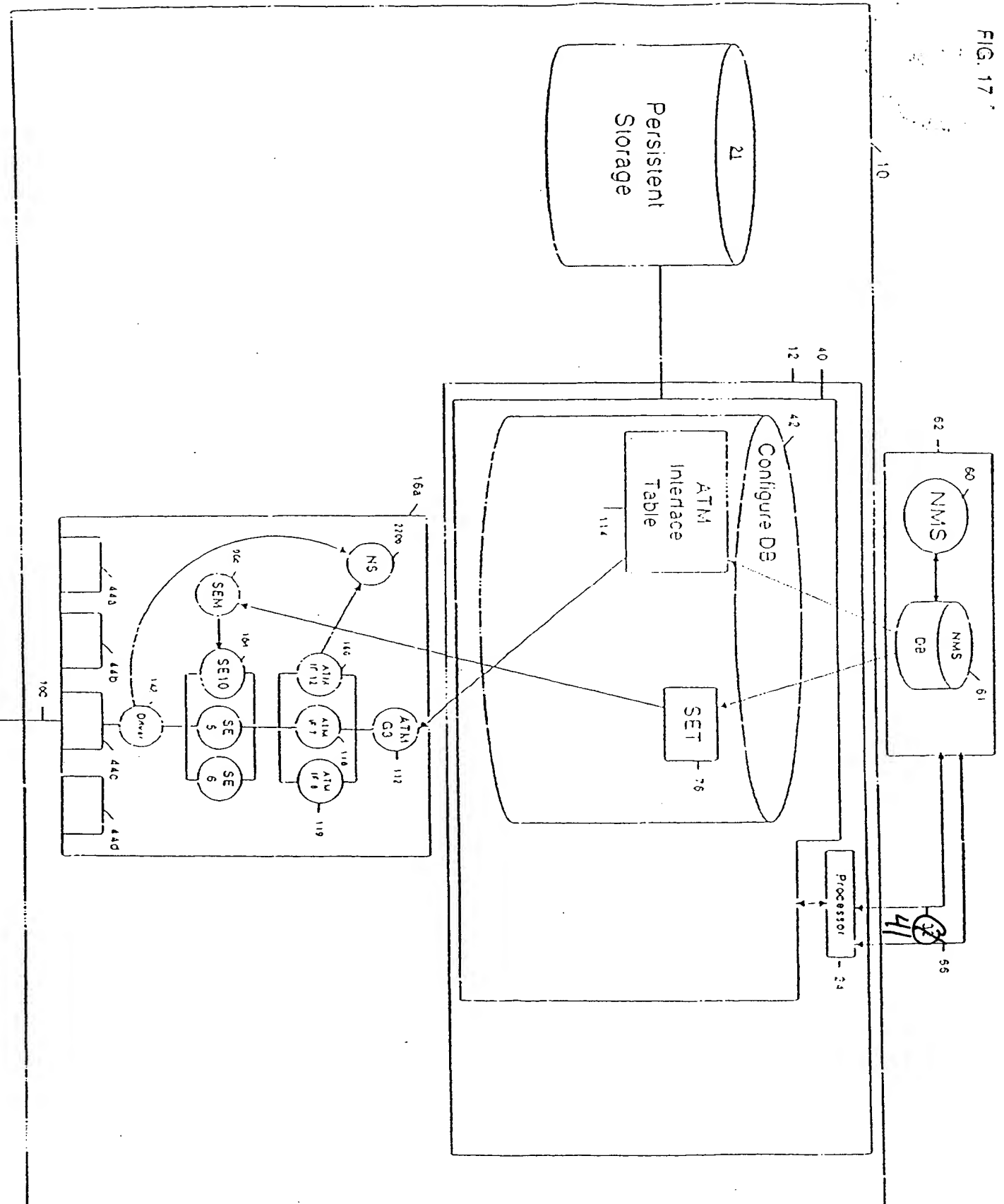
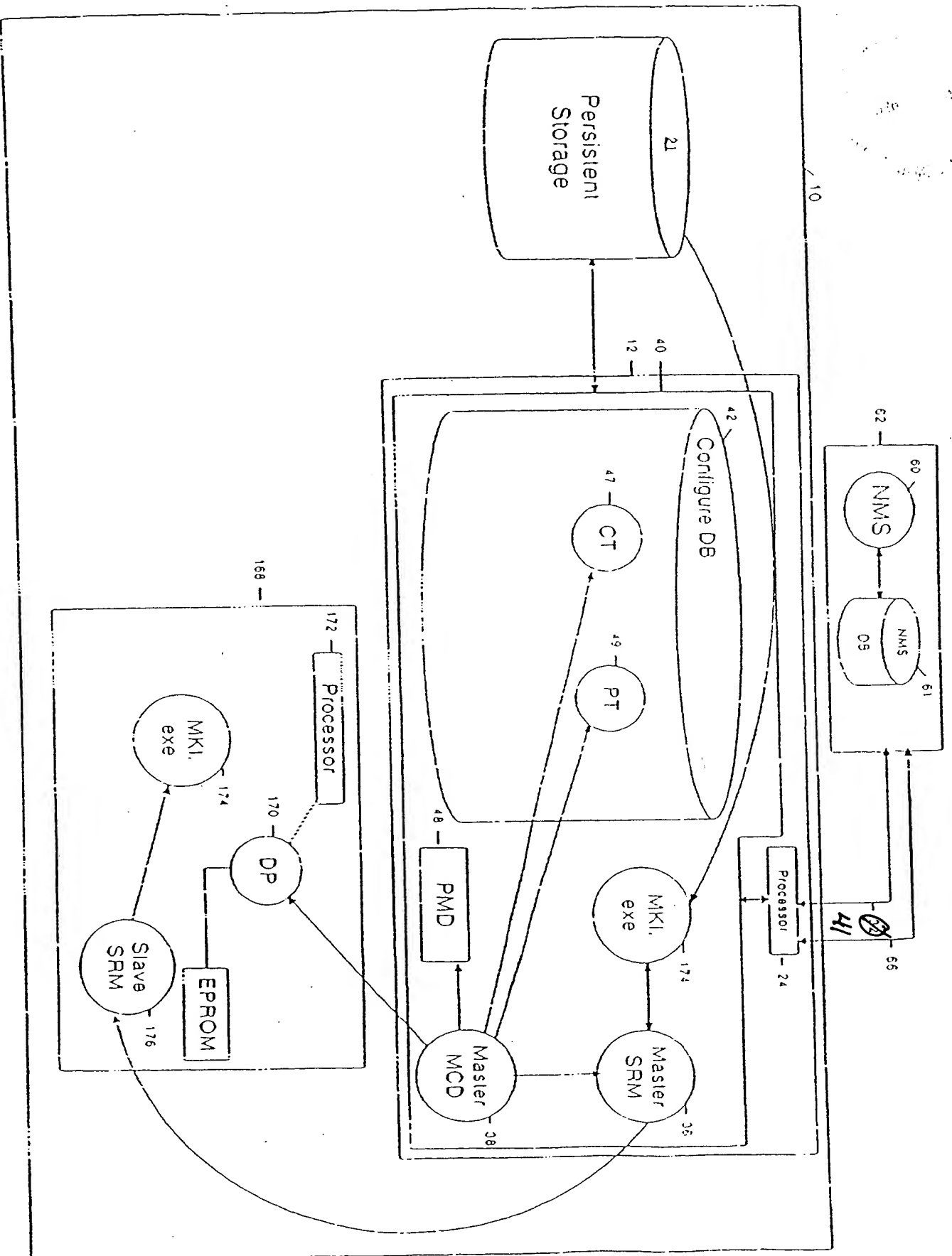


FIG. 18



19

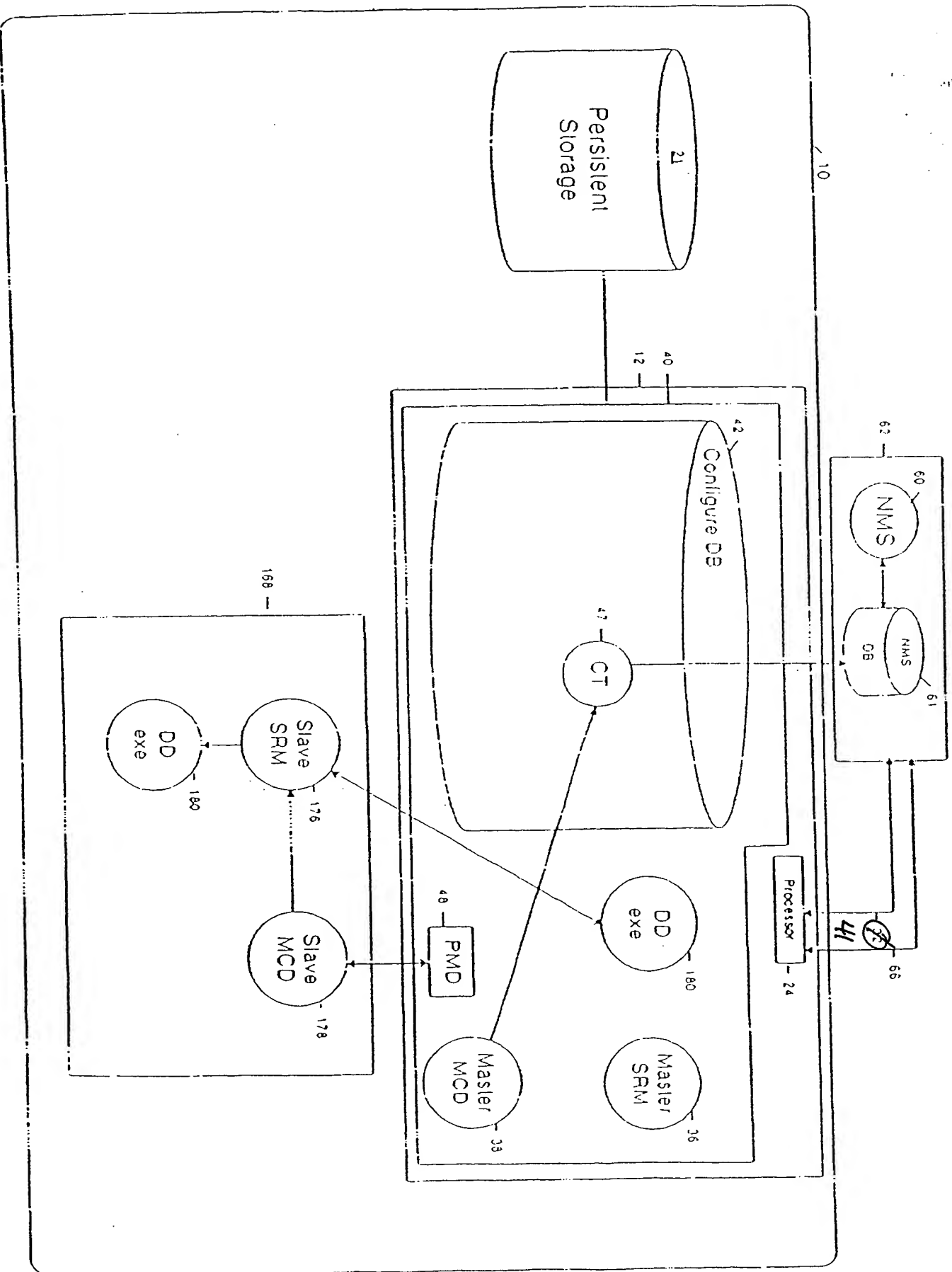


FIG. 20

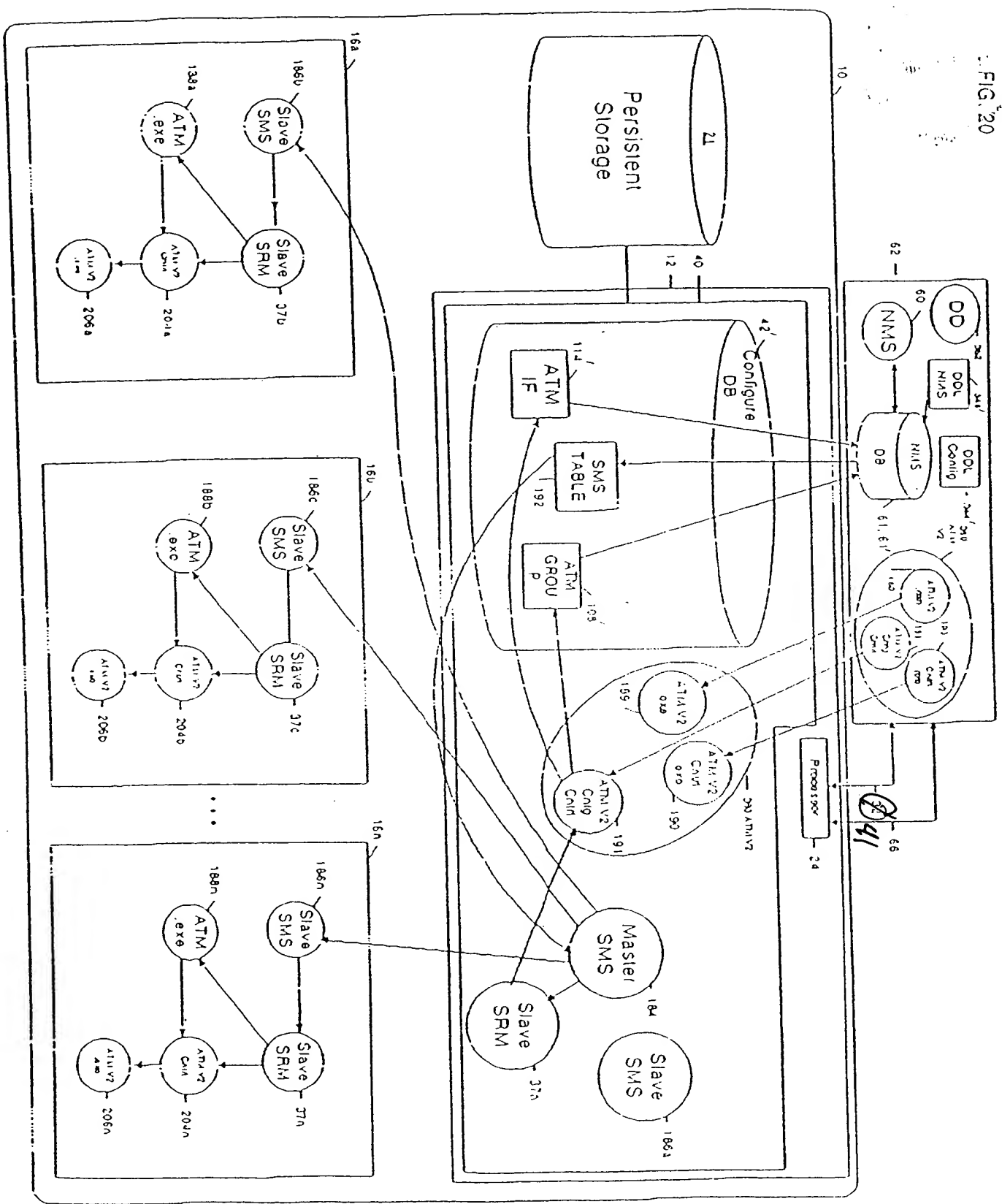


FIG. 23

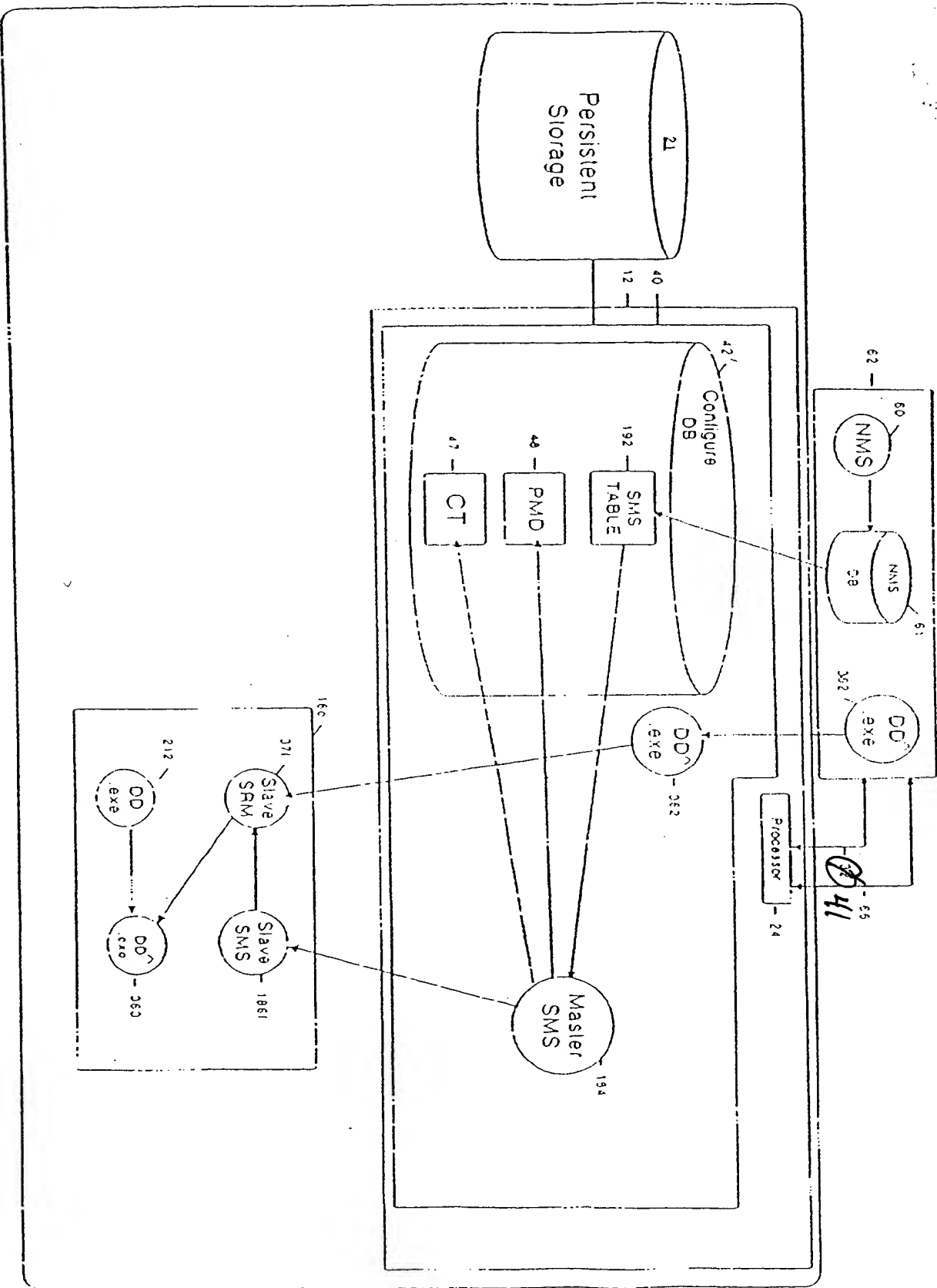


FIG. 26

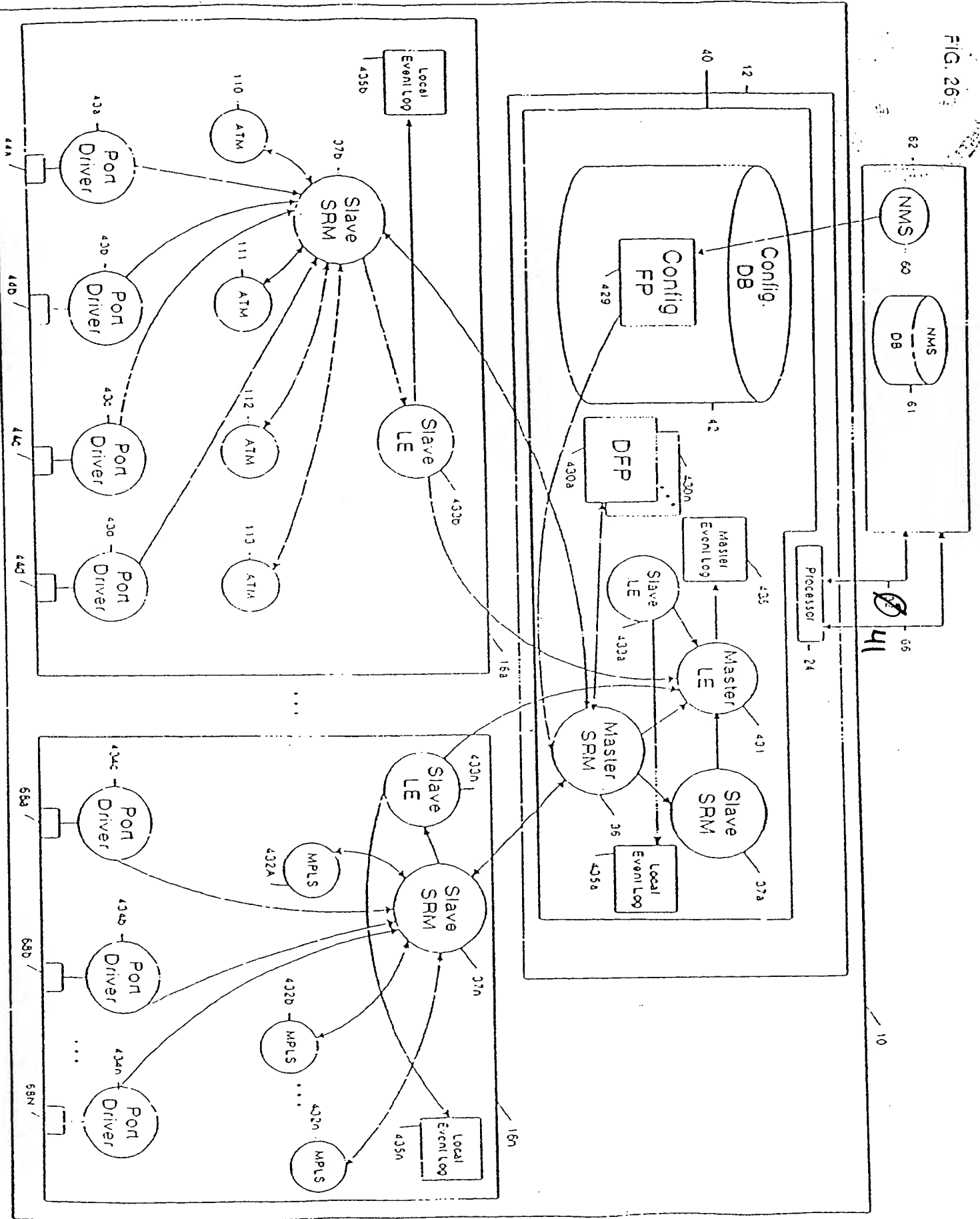


FIG. 35

41

NMS

60

62

Persistent Storage

Confo DB

PRM

542

540

540

Switching Fabric Card (SF)

570a

570b

570c

570d

570e

570f

570g

570h

570i

570j

570k

570l

Quadrant 1

(Redundant) Forwarding Card

Forwarding Card

Cross Connect Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Quadrant 3

(Redundant) Forwarding Card

Forwarding Card

Cross Connect Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Quadrant 4

(Redundant) Forwarding Card

Forwarding Card

Cross Connect Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

Quadrant 2

(Redundant) Forwarding Card

Forwarding Card

Cross Connect Card

Universal Port Card

Universal Port Card

Universal Port Card

Universal Port Card

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Universal Port Card

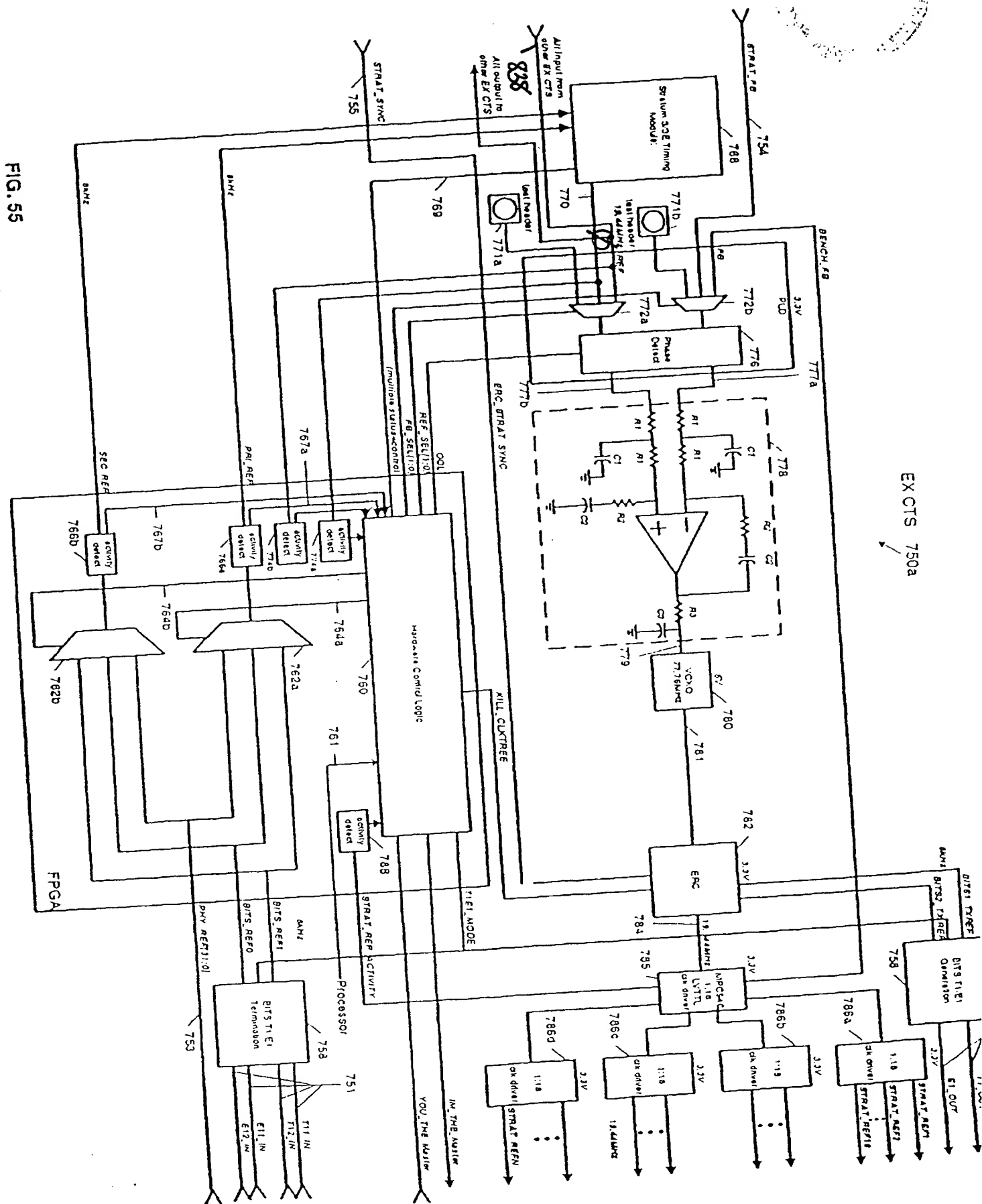


FIG. 55